

*Chavannes. (A)*

HEREDITY,  
Cross--Breeding  
AND  
*PRE-NATAL INFLUENCES.*

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BY  
ALBERT CHAVANNES.

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## CHAPTER I.

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IN earlier articles that I have written I have tried to answer some objections advanced against some former statements I had made. I wish now to briefly explain what I believe is the power that we call Heredity, and how it offers to us a foundation for improvement, through cross-breeding and pre-natal influences.

According to the evolution theory—which I fully accept, and make the basis of all my investigations—man is the result of slow development from lower forms of organisms; and this development has gradually evolved more and more perfect organizations by being fixed and transmitted through the power of Heredity. These developments are due to a change of surroundings, calling into play new faculties; and these faculties, improved by use, become fixed in the individual, and can be transmitted to its posterity. Heredity is the chain whose several links not only bind the whole human race, but also unite man with animals and with vegetative life.

This view of the question is usually ignored by investigators, and only its recent manifestations are studied. How the father or the mother influence their offspring is the aim of their research; but they forget, that however great their influence may be, it is nothing compared to what they transmit, which they had no hand whatever in creating. The shape of man, his internal structure,

all that are called the vegetative functions, all that he has in common with animals, have been evolved long before man existed ; have been "inherited" from animals, and are now so irrevocably fixed that no process can possibly alter them. The Chinese have dwarfed the feet of their women for countless generations, but the shape of the feet have in no wise been altered thereby ; and the children of the Flathead Indians are born with heads of the normal shape.

Heredity is no new power called out by the advance of civilization. It is the corner-stone of improvement by use or development, and alone makes it possible ; and, in tracing its influence upon the existing generations of men, we must bear in mind the permanency of all influences, and the immense number of living organisms which have in past ages slowly evolved all the powers that we possess.

It is now recognized that an influence is never lost. A stone thrown into the middle of Lake Erie will change the relative position of the water all through the lake, and will change it for all time to come. In the same way, if one man five thousand years ago, developed a little more intelligence or thrift or cunning, in any direction whatever, the influence has been felt by his progeny to this time, and will be for all time to come. For lack of proper surroundings it may lay dormant but the potentiality is there ready to burst forth at the proper occasion.

The high state of development we have reached has not been attained at one bound. Not only have we all one father and one mother but we have four grandparents, eight great-grand-parents, and the number of our ancestors would increase in geometrical ratio if the line did not unite every time blood-relations marry ; but it is clear that if we accept the new belief in the great



antiquity of men we must recognize that every living child has in its organization faculties that have been transmitted to him by thousands if not hundreds of thousands of different persons, besides the faculties that have been transmitted to pre-historic men from lower living organisms.

These attributes that have become thoroughly fixed by an immeasurable length of hereditary descent are beyond our control. Not only the distinct attributes that divide men from animals, but also the difference that divides the different races of men cannot be overcome. No pre-natal influence or changed surroundings will turn a negro into a white man or a Chinese into an Indian. Those attributes which we can somewhat control are those which are only coming now in possession of the race and have not yet acquired a permanent character. They are those that are in process of formation through the influences of an advance in civilization.

Almost the whole make-up of man, that which clearly separates him from animals, his standing posture, the use of his hands, his enlarged brain, etc., is irrevocably fixed. The difference between the races is fixed also except as far as it can be overcome or changed through cross-breeding; but the complete development of separate individualities can, within certain limits, be greatly influenced by pre-natal influences.



## CHAPTER II.

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It is on account of the exceedingly slow nature of permanent improvement and development that cross-breeding offers special advantages for the amelioration of the human race. Most of the improvements in plants or animals, due to the agency of men, are artificial. They are brought about by artificial surroundings and care, and it takes but a few generations for an improved cow or a cultivated strawberry to revert to its original state, if the influences that have raised it above the wild state are discontinued. But it is not so with man. The progress that he has attained is due to his own efforts, carried on through long ages, and he has not only attained a high state of development, but he has also carried with it the power to maintain a state of perfect environment, in which those improved faculties can flourish.

Evolution has not settled for us the problem of the origin of life, nor told us why man alone, of all creatures, should be able to carry on at this time this process of self-development, but it enables us to understand somewhat of the process by which this development is realized.

An increase, however slight, in the power of the brain, brings an increase of faculties that calls for a change in the surroundings. This improvement in his environment promotes an increase in brain-power, thus creating an ever-increasing circle of enlarged brain-power and improved environment. But this progress is very soon travelled upon different lines. Even if we suppose that

the increase in brain-power should have been the same in pre-historic man, the difference in surroundings would soon differentiate the line of improvement. A tribe living by the sea would use its brain power in a direction different from one living in the mountains, and special faculties would thus acquire greater development in each separate tribe and nation.

Originally, there was but little difference in the possibilities of brain development among individuals of the same tribe. The life of each individual was the exact counterpart of the life of every other individual, and thus, in time, certain special lines of development became fixed in each tribe. It is not long since there has been a chance for diversity of acquirements. Two hundred years ago the son occupied the same position and learned the same trade as his father. The nobles ruled, the middle classes traded or manufactured, and the peasant cultivated the soil. The whole tendency of the past has been to develop individuals in special lines, and to fix this development through long ages of hereditary transmissions.

The march of civilization has brought about a change in the mode of improvement; the facilities for travel, the opening of new countries, are bringing persons of different nationalities together, and the result is a great deal of cross-breeding in the human race, and with its practice comes also an acknowledgment of its beneficent results.

We can easily understand that if a family or nation which has carried on a process of development in a special line, for instance in an aptitude for commerce, but is deficient in those qualities that are developed only by an agricultural or pastoral life, should unite with a family or nation which has specially developed in this line of improvement, the result would be an improvement upon



both. The offspring might not possess as high a state of development in either special direction, but it would possess a more even and more useful development, and be better qualified to fill successfully its probable position in life.

We can only appreciate the importance and benefits of cross-breeding, when we are fully impressed with the power of long-fixed Heredity. It is because a man in whom a certain line of development has been carried to a high state of perfection, and fixed in his organization by centuries of slow accretions made by his ancestors, unites with a woman in whom the same powers—but in a different line—have also been developed and fixed, that the blending of the two offers a prospect of great improvement.

That nature favors cross-breeding is very evident by the tendency of sexual attraction. People are usually attracted by their opposites, whose differences of organization are due to a difference in development in their several ancestors.

If cross-breeding exerts a beneficial influence, the United States is especially favored in this direction, and will at no distant day reap the reward of their liberal policy that opened this country to immigrants from all nations.





### CHAPTER III.

To more clearly explain my belief in regard to pre-natal influences, I compare life to a game of cards. The deck of cards is made up of all the countless faculties that have been evolved by countless past generations. Out of that deck a hand is dealt to the individual by the act of conception, and the limits of the faculties of that individual are fixed by the potentialities that are thus transmitted to him. But the result of the game of life, like that of a game of cards, depends not only upon the hand dealt, but also upon the skill with which it is played; and that skill is a matter of education which commences in its mother's womb the day of its conception.

During the first nine months of its life, every child passes through a brief epitome of the whole process of evolution, and how far that development will go, and what special direction it will take, is largely dependent upon the influences that reach it through its mother's organization.

While I believe that the leading characteristics cannot be changed, and as I have before stated, that the distinctions between the races are so well fixed as to be beyond the control of such influences; yet, if the child possesses within himself the possibilities of different potentialities, there must be more or less conflict between them, and the life of the mother must have an influence in deciding this conflict.

If an influence can never be lost, a child must possess within itself the potentiality of all the attributes evolved by his ancestors. But it is very certain that they cannot all develop together. We can compare him to the natural soil, which is full of seeds of different kinds, each ready to spring forth whenever favorable circumstances present themselves. While the seeds are all there, only the strongest, that is, those that are best suited to the present conditions, will take possession and hold it till the conditions change. And I believe it to be just the same with the different faculties of the child. Every one possessed by its ancestors has left its seed in the organization of all their progeny, and they will develop or not, according to the conditions in which the child or germ is placed. The faculties that man possesses in common with animals, have been so thoroughly fixed, and all disturbing influences have been so thoroughly bred out that there is no conflict, and there is no difference in the first stages of development of the foetus in its mother's womb; but as it reaches a higher stage of development, when the higher qualities which have been evolved in a later state of civilization are being developed in the child, then they each struggle for mastery, and surrounding or pre-natal influences become of great importance. Honesty, implanted by a long line of strong ancestors, may struggle with cunning or deceit derived from another line of ancestors, and as the mother encourages honesty or deceit in herself during pregnancy, so the child may develop in one line or the other. Or the tendency may be to art or music, or to literature or invention, or to housework or handiwork, and as the mother conducts herself, it may and will help one of those tendencies to develop in such a manner as will help it to gain a start over the others that will have a controlling influence in the child's life.

Thus, I believe in pre-natal influences, within the limits of hereditary attributes, and based upon the persistency of hereditary transmissions, which is entirely different from pre-natal influences based upon imagination. One rests upon a long line of brain accretions, fixed into the race, forming a ground-work for us to work from that we can rely upon, our only influence being to encourage one line of development and to discourage another, while the other rests upon the clouds and is about as reliable.

Pre-natal influence is early education, of great importance, because it takes the child when it is yet plastic and under the close influence of its mother's character and life, but unless founded upon sound hereditary attributes and supplemented by a wise course of education after birth, its influence will be very transient and unreliable in its results.





## APPENDIX.

WHILE the foregoing chapters were running in the columns of DR. FOOTE'S HEALTH MONTHLY, a discussion arose between writers favoring the Heredity movement and Dr. George W. Keith who was disposed to question the positions taken by stirpicultural writers. Among those who replied to Dr. Keith was Mr. Albert Chavannes, and the publishers of this pamphlet have thought best to add this matter, as it presents Mr. Chavannes' views in a still clearer light.

Dr. Keith, in an open letter to the students of Heredity, gave some remarkable facts coming under his observation in a farming district in New England where he lived long and knew the people thoroughly. It was in the days when everybody used New England rum, and it was not uncommon for a man to drink a quart or more in a day. Well, Dr. Keith cited case after case of men who were recognized as little less than sots and who married into families wherein drunkenness prevailed, and still the children of these parents seemed to be industrious, sober and intelligent. Most of these intemperate men had large families and yet their children exhibited no trace of the bad habits of their parents. Of fifty-one children of drunken fathers and of ignorant, hard-worked mothers, four-fifths of these children lived to

make strong, healthy men and women and *not one* became a drunkard, a criminal or a pauper, and most of them were superior to their parents. The doctor related cases wherein excellent Christian men and women had drunken children while the offspring of some, who were not only intemperate but thieving and otherwise vicious, grew up to be exemplary men and women. "Why, my friends," exclaimed Dr. Keith, "I could go on from 'July to eternity' citing cases where temperate parents have had drunken children, virtuous parents vicious children, strong and healthy parents feeble and puny offspring, and on the other hand where drunken parents have had temperate children, vicious parents children of good moral character, and weakly parents strong and vigorous children. There is something deeper than the laws you formulate."

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### Mr. Chavannes' Reply to Dr. Keith.

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If the knowledge that the children of drunken parents often turn out to be sober and industrious were sufficient to disprove the laws of Heredity, there would have been no attempt to study them as a science, for no observer who keeps his or her eyes open can have failed to have known many such cases.

Dr. Keith's statements are not remarkable for their novelty, but for the number of cases that happened at once in a limited neighborhood, and for the ability and skill with which he has made use of them to sustain his own conclusions and throw doubt upon the efficacy of hereditary and pre-natal influences.

But true investigators are not to be turned aside by such obstacles, and that which cannot be explained can be ignored, the different methods by which this is done

being faithfully shown by the many answers of your several correspondents.

After reading Dr. Keith's letter, I also desired to say a few words in answer, but you were then publishing some of my articles, whose contents must form the base of my explanations, and I preferred to wait till they had been all printed. Now they are all before your readers and I shall make use of Dr. Keith's statements to show that according to the principles I have tried to lay down, an easy and satisfactory explanation is possible.

My theory, briefly stated, is that the influences of Heredity do not run back simply to the father and mother or to the immediate ancestors, but that they reach back to the very origin of life. That the later developments have not yet become fixed and are exceedingly complex in their nature, and being often antagonistic to each other, the question of which of these influences shall prevail is decided by pre-natal influences before birth, and the influence of the environment afterwards.

#### DRUNKENNESS NOT INHERITED.

It must be acknowledged that according to this theory the tendency to drunkenness cannot yet be fixed. One-half of our ancestors - the female portion - is hardly ever addicted to drink, and of the other half - the males - only a very small number drink to excess, so that there is no man or woman but that must count among their ancestors more sober persons than drunkards. From this fact I think I am justified in stating that drunkards, contrary to the usual opinion, are not born drunkards, but are usually made so by surrounding circumstances.

From the above I draw two conclusions: First, that the children of drunken parents stand an even chance, at least, to be sober or intemperate; and second, that it will be decided by the surroundings in which they live.



Now, let us turn to Dr. Keith's letter and see what lesson we can draw from it. The first thing I notice is that the drinking generation belongs to a past age, probably born in the beginning of this century or thereabout; and furthermore, that their character was formed at a time when moderate drinking was the rule, and among surroundings most favorable to develop any tendency to drink they might possess. But their children appear to be now in their prime, probably born some forty or fifty years ago, more or less. Now, if at about that time a new influence, adverse to the use of liquor, began to be felt in their neighborhood, we need look no further for the striking change that has taken place.

I believe that there was just such an influence. I know that fifty years ago most extensive religious revivals took place in the eastern states, and I believe that the temperance movement originated at about the same time. I have no doubt in my mind that the children as they grew up, had impressions made upon them that had never been felt by their parents; that they were made to see the evil of an undue use of liquor, that the lessons they were thus taught were strongly re-enforced by the practical experience of their homes, and that it is to a complete change in public knowledge and public sentiment, and to nothing else, that the change in conduct must be ascribed. My own observation is that the children of drunkards are very apt to grow up sober men if they have sufficient character to develop any manhood at all, because they feel at home in poverty, abuse, discomfort and family quarrels, the evil effects of drunkenness, and it only needs the force of public sentiment to make this influence generally operative. Nor is there anything strange if the children of drunkards belong to the best members of society, for it is often the most gifted men that become addicted to drink and

they would naturally transmit to their children their ability; and besides, no boy can overcome the temptations that surround him in his home and educate himself to a position of usefulness under adverse circumstances, without developing the very best that there is in him, and putting himself through a training that will give him a superior advantage in life.

#### AN EXPLANATION OF THE DRINKING PROPENSITY.

The drinking propensity of the children of sober parents can be as easily explained. Besides the fact that they may have inherited from some far-off ancestors some tendencies that made them liable to be easily overcome by the drinking habit, the education of so-called moral parents, founded upon authoritative morality, is probably the worst that can be given to a boy to teach him to overcome temptation. Authoritative morality, based upon the dictates of men, is the antithesis of common sense or natural morality, based upon a knowledge of natural laws. Under its teachings the "goody, goody" parents, of the kind described by Dr. Keith, raise their children in ignorance of the knowledge they most need, and try to replace by good advice and moral precepts, the knowledge that can only be obtained by actual experience. In the same class are now found the men and women that would keep their children ignorant of all sexual knowledge, and among them are found the greatest sufferers from sexual ignorance. It is not without cause that has arisen the sayings that stigmatize, as a class, minister's sons and deacon's daughters.

I will risk what little reputation I possess upon the prophecy that when morality will mean the knowledge of natural laws and the willingness to obey them, the children of moral parents will not be apt to become sots and drunkards.

## A REVIEW OF DR. KEITH'S REVIEWS.

From what I have written so far, Dr. Keith will not be surprised if I join issue with him as to some of the opinions expressed in his reply to his critics. I shall take them in the order in which I find them, although it may not be the best for a lucid explanation of my own position.

He closes his answer to Mr. Jones by stating that there are other forces stronger than Heredity. To that I cannot agree. The more I study the question the more I am compelled to believe that the forces of Heredity are the strongest forces in existence, and not to be turned aside by any other known forces. All that men can do with them is to learn to understand them so as to be able to turn them to their own advantage. When Dr. Keith will have found a way to turn a negro into a white man, except through the slow working of hereditary forces, and by the help of cross-breeding, I will be ready to admit that there are stronger forces.

In his answer to Mr. Blodgett, the doctor falls into the very common error of considering man's desires and man's intelligence as something apart from Nature. How does he know but that man is Nature's agent to bring about the very improvement in animals he says might have been accomplished if left to the undisturbed action of natural selection? He will acknowledge, I suppose, that whatever improvement would have taken place in them would have been due to a change in environment, and an unconscious struggle to fit themselves to the change. Now, is not the advent of man upon the earth, and the gradual increase of his desires and of his intelligence, and his appropriation of Nature's forces for his benefit, a change of environment, and have we any reason to believe that this change is not as much under the control of Nature's laws as any other change that took place



before man's advent? He says: "Therefore, I cannot accept the experiences of stock-breeders as a basis for recommending similar measures among mankind, who is not enslaved by a superior race of beings, who, viewing us from a stand-point corresponding to that from which we look upon animals, shall conduct similar experiments." I would ask if man, though not enslaved by superior beings, is not under the control of superior forces that compel and control the line of his progress as much as if he were a slave?

### SHALL WE "DO NOTHING?"

And this brings me to the objection I have to his conclusion, "Do Nothing." If man, impelled forward by an over-mastering desire for happiness, helped along by an ever-increasing intelligence and knowledge, has one after the other learned how to use the forces of Nature for his own benefit, if he has tamed plants and animals, harnessed steam, confined electricity, why should he stop at the forces of Heredity and let unassisted Nature take its course? If man, as I believe, is only an agent in the hands of a superior force, to bring about a higher state of development that could not be done without him, and if after getting hold of the simpler forces, he should now realize that he can use the force of Heredity, first upon plants and animals and next upon himself, why should we cry: Halt! What argument could we use that could not be turned with the same force against every step that has been taken from the dawn of civilization to this day?

Before I close I want to say a few words in answer to Mrs. Read. I do not believe that the fear of not being born will prevent us from studying Heredity or acting upon the knowledge that we may thus acquire. We all act in that manner, which, according to the intelligence

we possess, we believe will result in an increase of pleasant sensations, or happiness. How it may affect unborn generations is hardly ever considered; nor do we often consider how it may affect the very people by whom we are surrounded. But may it not be that, after all, there is such a thing as a Harmony of Nature, and that the happiness of others and of unborn generations may be best promoted by that which *truly* promotes our own happiness? If it is so, how much it would simplify the conduct of life; for instead of following the results of our actions until they lose themselves in unknown spaces, we should be able to concentrate all our intelligence upon the study of our conduct as it concerns ourselves.

How far we have sufficient knowledge of all the factors of child-making to render it of practical value, is a question that can only be decided by practical experience. In plants and animals we have succeeded in attaining decided improvements. It is hard to believe that the same results will not be obtained in the production of children. Nothing would more increase the happiness of parents than the ability to raise finer and healthier children.



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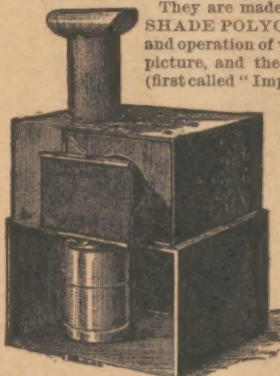
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